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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER CHEN, ALAN S	
ART UNIT 2182	PAPER NUMBER

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/815,818	Applicant(s) YEN, SHENG SHUN	
	Examiner Alan S. Chen	Art Unit 2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-9 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: in line 2, insert term -the- after "at least". Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 7-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 7 recites the limitation "the interface controller" in lines 3 and 4, "the same Data packet" in lines 4 and 5, and "Handshake packet" in the last line. There is insufficient antecedent basis for these limitations in the claim.

5. Claim 8 recites the limitation "the structure" in lines 3 and 4. There is insufficient antecedent basis for this limitation in the claim. Examiner assumes Applicant is referring to the device.

6. Claim 9 recites "...proper circuitry". What constitutes as "proper circuitry" is highly subjective, circuitry used to accomplish a task can be designed in various different ways. Examiner assumes any circuitry used that can connect the differential receiver and current driver to the interface channels will suffice. Examiner recommends expressly stating specific types of circuitry to overcome this rejection.

Claim Rejections - 35 USC § 102

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7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Universal Serial Bus Specification Revision 2.0 (*USB2.0*).

9. Per claim 1, *USB2.0* discloses a data transmission interface (*Fig. 6-13, page 116, shows a signal connector for two pairs of USB signal lines*) compatible with USB 1.0, USB 1.1 or USB 2.0 protocols (*USB2.0 is inherently backwards compatible with previous versions of USB*) and comprising at least the following interface signals: Vbus (*Section 6.5.2, page 94 shows contact number 1 in Fig. 6-13 is the Vbus*), D0+ (*Section 6.5.2, page 94 shows contact number 3 in Fig. 6-13 is the D+, one of the two shown D+ representing D0+*), D0- (*Section 6.5.2, page 94 shows contact number 2 in Fig. 6-13 is the D-, one of the two shown D- representing D0-*), D1+ (*Section 6.5.2, page 94 shows contact number 3 in Fig. 6-13 is the D+, one of the two shown D+ representing D1+*), D1- (*Section 6.5.2, page 94 shows contact number 2 in Fig. 6-13 is the D-, one of the two shown D- representing D1-*) and GND signals (*Section 6.5.2, page 94 shows contact number 4 in Fig. 6-13 is GND*), D0+, D0- are one differential signal set, D1+,

D1- are another differential signal set, Vbus offers interface power, GND connects to ground (*USB2.0 defines a different pair of signal lines, the Vbus and GND signals*).

10. Per claim 2, USB 2.0 discloses claim 1, USB2.0 further disclosing said GND connects to ground for noise isolation purposes (*defined in USB 2.0 specification*).

11. Claims 8 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pat. No. 6,725,302 to Benayoun et al. (*Benayoun*).

12. Per claim 8, Benayoun discloses a Dual Channel Universal Serial Bus device (*Fig. 4 and Fig. 5, element 12*) and is compatible with USB protocol transmission interface (*Column 2, lines 55+ disclose hubs being USB hubs*) and comprises of two data transmission channels (*Fig. 4, element 18 and 24, shows two USB channels*), every said channel further comprises of two differential signals (*per the USB specification*), the device consists of a interface controller (*Fig. 4, element 46*) with data conversion and transmission functions (*Fig. 4 controller assists in conversion of signal to wireless format to be transmitted wirelessly via antenna element 32*).

13. Per claim 9, Benayoun discloses claim 8, wherein said interface controller consists of at least a Differential receiver and a current driver, said Differential receiver and said current driver connect to differential signals of interface channels through proper circuitry (*page 120, Fig. 7-1 of USB specification shows signaling requiring drivers, differential receiver and other circuitry*).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148,

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

16. Claims 3-5 are rejected under 35 USC 103(a) as being unpatentable over

USB2.0 in view of Benayoun.

USB2.0 discloses claim 1. The interface with two ports shown in Fig. 6-13, page 116 of USB2.0 is used for data transmission.

USB2.0 does not disclose expressly the two differential signal sets being designed in a Master/Slave structure, wherein the Master set handles coordination of the different versions of USB specification as well as data transmission.

Benayoun discloses a dual channel USB hub (*Fig. 4*) wherein said one channel interfaces a slave device while the other channel interfaces a master device (*Fig. 5, element 12 is the hub shown in Fig. 4, DO refers to the slave channel and UP refers to the master channel; Column 5, lines 10+ disclose PC as master and camera as the slave; the PC initiates communication using the USB protocol*).

USB2.0 and Benayoun are analogous art because they are from the same field of endeavor in utilizing dual channel USB interfaces.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to apply the integrated single USB connector shown in USB2.0 in Benayoun.

The suggestion/motivation for doing so would have been a compact design that minimizes physical space on the surface panel of the wireless hub of Benayoun.

Therefore, it would have been obvious to combine USB2.0 with Benayoun for the benefit of space efficiency.

Allowable Subject Matter

17. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is the statement of reasons for the indication of allowable subject matter: The prior art disclosed by the applicant and cited by the Examiner fail to teach or suggest, alone or in combination, ***all*** the limitations of the independent claim(s) (claim 1), particularly where the data transmission interface has both the Master and Slave differential signal sets apply a Chirp sequence J and K with varying high and low signaling assertions, to complete the transmission protocol.

18. Claim 7 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is the statement of reasons for the indication of allowable subject matter: The prior art disclosed by the applicant and cited by the Examiner fail to teach or suggest, alone or in combination, **all** the limitations of the independent claim(s) (claim 1), particularly where Master and Slave differential signal sets are not synchronous and when a data transmission error occurs in one of the differential signal sets, an interface controller stops sending out data but continues sending out the same data packet until the interface controller on the reception side receives correct data and sends out a handshake packet.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Patents and patent related publications are cited in the Notice of References Cited (Form PTO-892) attached to this action to further show the state of the art with respect to dual channel USB interfaces.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan S. Chen whose telephone number is 571-272-4143. The examiner can normally be reached on M-F 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim N. Huynh can be reached on 571-272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ASC
10/13/2006


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